

Amendments to the Claims: This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

1-53. Canceled.

1 54. (Previously Presented) An endoluminal prosthesis, comprising: a tubular wire
2 support having a proximal end, a distal end and a central lumen extending therethrough; the
3 wire support comprising at least a first and a second axially adjacent tubular segment, joined
4 by a connector extending therebetween; wherein the first and second segments and the
5 connector are formed from a single length of wire.

1 55. (Previously Presented) An endoluminal prosthesis as in claim 54, comprising
2 at least three segments and two connectors.

1 56. (Previously Presented) An endoluminal prosthesis as in claim 54, comprising
2 at least five segments and four connectors.

1 57. (Previously Presented) An endoluminal prosthesis as in claim 54, wherein the
2 wire in each segment comprises a series of proximal bends, a series of distal bends, creating a
3 series of strut segments connecting the proximal bends and distal bends to form a tubular
4 segment wall.

1 58. (Previously Presented) An endoluminal prosthesis as in claim 57, wherein at
2 least some of the strut segments are substantially linear.

1 59. (Previously Presented) An endoluminal prosthesis as in claim 57, wherein
2 each segment comprises from about 4 proximal bends to about 12 proximal bends.

1 60. (Previously Presented) An endoluminal prosthesis as in claim 54, having at
2 least a proximal segment, an intermediate segment and a distal segment, wherein the
3 prosthesis is expandable from a reduced cross section to an expanded cross section.

1 61. (Previously Presented) An endoluminal prosthesis as in claim 54, further
2 comprising a polymeric layer on the wire support.

1 62. (Previously Presented) An endoluminal prosthesis as in claim 61, wherein the
2 layer comprises a tubular PTFE sleeve surrounding at least a central portion of the prosthesis.

1 63. (Previously Presented) A multizone endoluminal prosthesis, comprising: a
2 tubular wire support having a proximal end, a distal end, and a central lumen extending
3 therethrough; the wire support comprising at least a first and a second axially adjacent tubular
4 segments, joined by a connector extending therebetween; wherein the first tubular segment
5 has a different radial strength than the second tubular segment.

1 64. (Previously Presented) An endoluminal prosthesis as in claim 63, further
2 comprising a third tubular segment, wherein at least one of the tubular segments has a
3 different radial strength than the other two tubular segments.

1 65. (Previously Presented) An endoluminal prosthesis as in claim 64, wherein a
2 proximal end of the prosthesis is self expandable to a greater diameter than a central region of
3 the prosthesis.

1 66. (Previously Presented) An endoluminal prosthesis, comprising an elongate
2 flexible wire, formed into a plurality of axially adjacent tubular segments spaced along an axis,
3 each tubular segment comprising a zig zag section of the wire, having a plurality of proximal
4 bends and distal bends, with the wire continuing between each adjacent tubular segment,
5 wherein the prosthesis is radially compressible into a first, reduced cross sectional configuration
6 for implantation into a body lumen, and self expandable to a second, enlarged cross sectional
7 configuration at a treatment site in a body lumen.

1 67. (Previously Presented) An endoluminal prosthesis as in claim 66, comprising
2 at least three segments formed from said wire.

1 68. (Previously Presented) An endoluminal prosthesis as in claim 67, further
2 comprising an outer tubular sleeve surrounding at least a portion of the prosthesis.

1 69. (Previously Presented) An endoluminal prosthesis as in claim 67, wherein the
2 prosthesis has a proximal end and a distal end, and at least one of the proximal end and distal
3 end as expandable to a larger diameter than a central section of the prosthesis in an
4 unconstrained expansion.

1 70. (Previously Presented) An endoluminal prosthesis as in claim 66, wherein at
2 least one distal bend on a first segment is connected to at least one proximal bend from an
3 adjacent segment.

1 71. (Previously Presented) An endoluminal prosthesis as in claim 70, wherein the
2 connection comprises a pivotable connection.

1 72. (Previously Presented) An endoluminal prosthesis as in claim 71, wherein the
2 connection comprises a metal link.

1 73. (Previously Presented) An endoluminal prosthesis as in claim 71, wherein the
2 connection comprises a suture.

1 74. (Previously Presented) An endoluminal prosthesis as in claim 66, wherein the
2 prosthesis has an expanded diameter of at least about 20 mm-30 mm in an unconstrained
3 expansion, and the prosthesis is implantable using a catheter no greater than about 16 French.

1 75. (Previously Presented) A prosthesis as in claim 74, wherein the prosthesis
2 has an expanded diameter of at least about 24 mm, and is implantable on a delivery device
3 having a diameter of no more than about 16 French.

1 76. (Previously Presented) A method of implanting an endoluminal vascular
2 prosthesis, comprising the steps of: providing a self expandable endoluminal vascular
3 prosthesis, having a proximal end, a distal end and a central lumen extending therethrough,
4 said prosthesis expandable from a first, reduced diameter to a second, enlarged diameter;
5 mounting the prosthesis on a catheter, such that when the prosthesis is in the reduced
6 diameter configuration on the catheter, the catheter diameter through the prosthesis is no more
7 than about 16 French; introducing the catheter into a body lumen, and positioning the
8 prosthesis at a treatment site in the body lumen; releasing the prosthesis at the treatment site,
9 such that the prosthesis expands from the first diameter to the second diameter; wherein the
10 second diameter is at least about 20 mm.

1 77. (Previously Presented) The endoluminal prosthesis as in claim 54 further
2 comprising:

3 prosthesis segments configured for insertion into the vasculature of a body,
4 wherein said prosthesis segments are configured for engagement with one another to form said
5 endoluminal prosthesis in the vasculature;

6 wherein a portion of at least one of said prosthesis segments has a different
7 radiopacity, said portion of different radiopacity facilitating proper alignment of said prosthesis
8 segments with respect to one another during said engagement of said prosthesis segments.

1 78. (Previously Presented) The endoluminal prosthesis as in claim 54 further
2 comprising:

3 prosthesis segments configured for engagement to one another to form said
4 endoluminal prosthesis in a body lumen;

5 radiographic indicia defined on at least one of said prosthesis segments and
6 having different radiopacity from said prosthesis segment, wherein the composite radiographic
7 image of said radiographic indicia varies with the rotational orientation of said prosthesis
8 segment in the body lumen;

9 wherein the rotational orientation of said prosthesis segment in the body lumen is
10 indicated by said radiographic image for optional adjustment of the rotational orientation.

1 79. (Previously Presented) A system for introducing the endoluminal prosthesis
2 of claim 54 into a vessel to define a continuous lumen, said system comprising:

3 a first introducer for introducing a first prosthesis segment of said endoluminal
4 prosthesis into the vessel, said first prosthesis segment having a portion adapted for connection
5 to another prosthesis segment; and

6 a second introducer for (a) introducing a second prosthesis segment of said
7 endoluminal prosthesis in a radially compressed state into the vessel and into said portion of
8 said first prosthesis segment, and (b) deploying said second prosthesis segment to connect to
9 said portion of said first prosthesis segment and to define said continuous lumen through said
10 first prosthesis segment and said second prosthesis segment.

1 80. (Previously Presented) The endoluminal prosthesis as in claim 54, said
2 endoluminal prosthesis being configured for placement at an aneological bifurcation of a vessel
3 into two branched vessels, said endoluminal prosthesis further comprising a first bifurcated
4 graft member, at least partially supported by a bifurcated stent member, defining two lumens,
5 at least one of which is configured to be disposed entirely within said vessel and is adapted to
6 mate with a second stent configured to extend into one of the two branched vessels.

1 81. (Previously Presented) The endoluminal prosthesis as in claim 54, said
2 endoluminal prosthesis comprising proximal and distal prosthesis segments, a male engaging
3 portion on a selected one of said proximal and distal prosthesis segments, and a female portion
4 on another one of said proximal and distal prosthesis segments, said male engaging portion
5 being configured to be positioned at least partially within said female portion for inter-
6 engagement between the outer surface of said male engaging portion and the inner surface of
7 said female portion to resist longitudinal movement to prevent separation of said proximal and
8 distal prosthesis segments in service, each of said male engaging portion and said female
9 portion comprising a stent and at least one of said proximal and distal prosthesis segments
10 comprising a graft layer attached to said stent, said graft layer being configured to be
11 interposed between said male engaging portion and said female portion to form a substantially
12 fluid-tight seal upon assembly.

1 82. (New) An endoluminal prosthesis, comprising:

2 a tubular wire support having a proximal end, a distal end and a central lumen
3 extending therethrough;

4 the wire support comprising a plurality of tubular segments, each tubular
5 segment comprising a series of proximal and distal bends, wherein the tubular segments are
6 joined by a connector extending therebetween; the plurality of tubular segments extending
7 from a proximal region of the tubular wire support to a distal region of the tubular wire support;

8 wherein the distal region of the wire support radially expands in response to
9 distally directed anatomical forces on the tubular wire support to increase resistance to distal
10 migration of the prosthesis.

1 83. (New) The endoluminal prosthesis as in claim 82, wherein the prosthesis
2 is self expandable from a first smaller diameter to a second larger diameter.

1 84. (New) An endoluminal prosthesis as in claim 82, further comprising a
2 polymeric sleeve on the wire support.

1 85. (New) An endoluminal prosthesis as in claim 84, wherein the polymeric
2 sleeve comprises ePTFE.